



## Urban greening to cool towns and cities: A systematic review of the empirical evidence

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### Abstract:

Urban greening' has been proposed as one approach to mitigate the human health consequences of increased temperatures resulting from climate change. We used systematic review methodology to evaluate available evidence on whether greening interventions, such as tree planting or the creation of parks or green roofs, affect the air temperature of an urban area. Most studies investigated the air temperature within parks and beneath trees and are broadly supportive that green sites can be cooler than non-green sites. Meta-analysis was used to synthesize data on the cooling effect of parks and results show that, on average, a park was 0.94 degrees C cooler in the day. Studies on multiple parks suggest that larger parks and those with trees could be cooler during the day. However, evidence for the cooling effect of green space is mostly based on observational studies of small numbers of green sites. The impact of specific greening interventions on the wider urban area, and whether the effects are due to greening alone, has yet to be demonstrated. The current evidence base does not allow specific recommendations to be made on how best to incorporate greening into an urban area. Further empirical research is necessary in order to efficiently guide the design and planning of urban green space, and specifically to investigate the importance of the abundance, distribution and type of greening. Any urban greening programme implemented would need to be appropriately designed and monitored to continue to evaluate benefit to human health through reducing temperature. (C) 2010 Elsevier B.V. All rights reserved.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Temperature

**Temperature:** Extreme Heat

#### Geographic Feature:

resource focuses on specific type of geography

Urban

#### Geographic Location:

# Climate Change and Human Health Literature Portal

resource focuses on specific location

Global or Unspecified

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

## **Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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